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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,801	04/20/2001	Alexander Berk	SPSC/0103	3353

7590

03/24/2006

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EXAMINER
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STEVENS, THOMAS H

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/838,801

Applicant(s)

BERK ET AL.

Examiner

Thomas H. Stevens

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2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 6 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-17, 19-31 were examined.
2. Claims 18 and 32 are cancelled.

### *Continued Prosecution Application*

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/03/2006 has been entered.

### *Section I: Final Rejection*

### *Claim Rejections - 35 USC § 101*

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

MPEP 2106, section 4.

Claims to processes that do nothing more than solve mathematical problems or manipulate abstract ideas or concepts are more complex to analyze and are addressed below. If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. Schrader, 22 F.3d at 294-95, 30 USPQ2d at 1458-59. **Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process.**

Claims 1-17, 19-31 are rejected under 35 U.S.C. 101 because the limitations are directed toward a mathematical algorithm, per se, rather than a practical application of the algorithm.

**Section II: Response to Previous Office Action (Final Rejection)**

**101**

5. Applicants are thanked for addressing this issue. The examiner agrees with the State Street law case relative to the post-solution activity argument. However, the question at large is whether the claims reflect a substantial, useful event to a credible activity.

In response to applicants' request "to state how the claim language of the claims has been interpreted to support the rejection" (pg. 9, 3<sup>rd</sup> paragraph of applicants' arguments), the Examiner interpreted the claims as simply a list of arithmetic steps, with transition however, but was silent as to the specific application or benefit from this process. As stated by State Street, the *application* of the Boolean principle produces a useful, concrete, and tangible result. In this case, the application (italic emphasized) of band model process is silent as to how one can benefit from such a process for such as purpose.

Furthermore, although the invention clearly is active within the real world, its not useful nor tangible since it lacks no substantial application as denoted by applicants (specification: pg. 7, lines 10-15):

*"The band model approach provides a major advantage over the more rigorous line-by-line (LBL) technique in that in-band values are computed directly. In LBL calculations, spectral optical depths are determined at a very high spectral resolution (typically, 0.01 to 0.0001 cm<sup>-1</sup>) and then transmittances are spectrally integrated to obtain the in-band values. At each spectral point, the absorption from all contributing*

*atomic and molecular lines must be computed and summed. In the long wave infrared, hundreds-to-thousands of lines often contribute significantly to a single spectral point. It is for this reason that a statistical approach is beneficial and often crucial for **solving real world problems.**"*

In fairness to the applicants, the Examiner searched the applicants' specification to find possible limitations to render the claims statutory. Rejection stands.

**102/103**

6. Applicants are thanked for addressing this issue. Rejections are withdrawn.

***Citation to Relevant Prior Art***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- MODTRAN: A Moderate Resolution Model for LOWTRAN; Berk et al., Spectral Sciences Inc., Burlington, MA Technical Report 12 May 1986 – 11 May 1987; teaches a new band model formulation for the LOWTRAN 6 atmospheric transmittance/radiation computer code.
- Halthore et al., "Models Overestimate Diffuse Clear-Sky Surface Irradiance: A Case for Excess Atmospheric Absorption" 1998 Spectral Science pg. 3591-3594; teaches experimentation of atmospheric absorption.
- Berk et al., "Reformulation of the MODTRAN Band Model for Higher Spectral Resolution". April 2000, pg. 1-10; teaches a standard resolution radiative transport model for wavelengths.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Paul Rodriguez 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

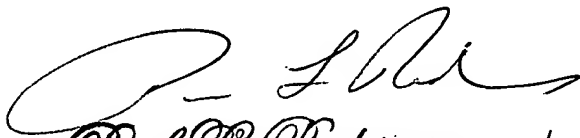
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

March 15, 2006

TS

  
Paul L. Rodriguez 3/17/06  
Supervisor Primary Examiner  
Art Unit 2125 2123